Executive Summary

This document defines the user interface style to be delivered by software developed for the Defense Information Infrastructure (DII). The style specifications address the appearance and behavior of individual interface components as well as provide rules for application and window design in software with a graphical user interface (GUI) or a browser-based interface. A common user interface style is essential to the overall usability of DII systems so that users can interact effectively with a variety of complex, multi-windowed applications within a single system.

The DII is an enterprise-level effort within the Department of Defense (DoD) to develop and field military systems that meet the needs of the warfighter in a global information environment. DoD relies on the DII Common Operating Environment (COE) to provide the degree of system integration and interoperability needed to meet warfighter requirements. The DII COE addresses systems in the command, control, communications, computers, and intelligence (C4I) and combat support domains within DoD. The Global Command and Control System and the Global Combat Support System are examples of C4I and combat support systems, respectively, that are based on the DII COE.

The specifications for GUI-based applications conform to the style defined by Motif and MS Windows and incorporate guidance published in the commercial literature on user interface design. An integrated set of design specifications that apply to both GUIs is provided to the extent possible, with separate direction indicated where the style standards differ. The specifications deviate from these standards only when needed to accommodate operational requirements or constraints, provided that the deviations are consistent with established user interface guidelines. The specifications for browser-based applications are based on features available in version 3.2 of Hypertext Markup Language and incorporate guidance on Web design published in the commercial literature and available on the Internet.

DII specifications define the user interface style where the primary mode of interaction is through a GUI or Web browser. The specifications do not address the design of software providing a character-based interface or offer direction regarding possible migration of this software to a GUI-based interface. The specifications focus on the style attributes that compliant software must possess in order to be accepted into the DII repository and do not define or mandate a methodology for user interface development. The specifications comply with direction provided by the DoD Human Computer Interface Style Guide and serve as the addendum to that document for the C4I and combat support domains in DoD.

Because visual and functional consistency within and among applications is a key element of usability, DII defines the following style requirements for GUI- and browser-based interfaces in all compliant software:

- A native application with a Motif user interface shall have a DII-compliant Motif style.
- A native application with an MS Windows user interface shall have a DII-compliant Windows style.
- A Web application with a browser interface shall have a DII-compliant browser style.

- A Web application with GUI functionality shall have a DII-compliant style that matches the GUI of the host platform.

Style compliance is required in the development of all new software and the migration of existing software submitted for inclusion in the DII repository. DoD organizations are expected to comply with all style specifications, with deviations occurring only when called for by operational requirements and approved by the Defense Information Systems Agency. New software shall be developed in accordance with DII requirements and be fully compliant with all style specifications; existing software is expected to migrate to full style compliance.

This document describes the interface components and design rules for Motif and MS Windows applications and provides direction on page design and information presentation in Web applications. Sections 2 and 3 describe the input devices available to users and the manner in which they use these devices to interact with an application. Sections 4, 5, and 6 address the appearance and behavior of windows, menus, and controls in the application.

Section 7 describes application design and the integration of applications in a system. Section 8 contains visual design guidelines for primary and secondary windows, with section 9 providing specific formats for secondary windows. Sections 10 and 11 focus on the design of tactical displays and user support resources, while section 12 addresses the presentation of text and graphic information. Sections 13 and 14 describe page design, the presentation of text, images, and multimedia, and interactive capabilities in Web applications.

Section 15 provides guidance related to user interface internationalization; the guidelines in this section are included for use by DoD organizations with a requirement to provide internationalized software and not considered in determining DII style compliance.

Appendix A identifies the functions assigned to keys in Motif and MS Windows, and appendix B maps these keys to the keyboards for several DII hardware platforms. Appendix C defines standard vocabulary, mnemonics, and shortcut keys for common actions; appendix D provides graphics for some of these actions. Appendix E contains developer notes describing color sets, fonts, and application icon design in Motif and MS Windows. Appendix F lists acronyms and abbreviations used in the document. Appendix G maps the terminology in this document to that in Motif and MS Windows documentation, while Appendix H provides a glossary of style terminology. Appendix I maps the style specifications to DII compliance levels.